

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in this application:

Claims 1-33. (Canceled)

Please add the following new claims as follows:

34. (New) An intramedullary nail comprising:

a nail body having a longitudinal axis, a proximal end configured and dimensioned for coupling to an insertion device, and a distal end having a tip configured and dimensioned for insertion into the intramedullary canal of a long bone,
at least three transverse holes extending through the distal end of the nail body, each transverse hole defining a hole axis, and all three transverse holes grouped at the distal end within a distance x measured from the tip of the nail body to the axis of the transverse hole furthest from the tip,

wherein a projection of the three hole axes of the at least three transverse holes in a plane orthogonal to the longitudinal axis is such that at least two of the projected hole axes are at an angle α with respect to one another, where $0 < \alpha < 90^\circ$, and where the distance $x \leq 25d$, where d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes.

35. (New) The nail of claim 1, where the distance $x \leq 7d$.

36. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $58^\circ \leq \alpha \leq 62^\circ$.

37. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $59^\circ \leq \alpha \leq 61^\circ$.

38. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $43^\circ \leq \alpha \leq 47^\circ$.

39. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $44^\circ \leq \alpha \leq 46^\circ$.
40. (New) The nail of claims 1, wherein at least two of the projected hole axes are at an angle α of $35^\circ \leq \alpha \leq 37^\circ$.
41. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $35.5^\circ \leq \alpha \leq 36.5^\circ$.
42. (New) The nail of claim 1, The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $29^\circ \leq \alpha \leq 31^\circ$.
43. (New) The nail of claim 1, wherein at least two of the projected hole axes are at an angle α of $29.5^\circ \leq \alpha \leq 30.5^\circ$.
44. (New) The nail of claim 1, further comprising at least a fourth hole grouped at the distal end of the nail body within the distance x measured from the tip of the nail body to the axis of the transverse hole furthest from the tip.
45. (New) An intramedullary nail comprising:
a nail body having a longitudinal axis, a proximal end configured and dimensioned for coupling to an insertion device, and a distal end having a tip configured and dimensioned for insertion into the intramedullary canal of a long bone,
at least three transverse holes extending through the distal end of the nail body, each transverse hole defining a hole axis, and all three transverse holes grouped at the distal end within a distance x measured from the tip of the nail body to the axis of the transverse hole furthest from the tip,
wherein a projection of the three hole axes of the at least three transverse holes in a plane orthogonal to the longitudinal axis is such that at least two of the projected hole axes are at an angle α with respect to one another, where $0 < \alpha < 90^\circ$, and where the distance $x < 2(n)(d)$, where n is the number of transverse holes grouped within the distance x from the tip of the nail body and d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes.
46. (New) The intramedullary nail of claim 45, wherein the distance $x < 1.8(n)(d)$.

47. (New) The intramedullary nail of claim 45, wherein the distance $x < 1.5(n)(d)$.
48. (New) The intramedullary nail of claim 45, wherein the distance $x < 1.4(n)(d)$.
49. (New) The intramedullary nail of claim 45, wherein the distal end of the nail includes at least five transverse holes grouped within the distance x , such that $n = 5$.
50. (New) The intramedullary nail of claim 45, wherein at least two of the transverse holes at least partially intersect one another.
51. (New) The intramedullary nail of claim 51, wherein the at least two intersecting transverse holes are spaced at an angle α of $88^\circ - 92^\circ$ with respect to one another.
52. (New) The intramedullary nail of claim 45, wherein at least one of the transverse holes includes an internal thread.
53. (New) The intramedullary nail of claim 45, wherein at least one of the transverse holes includes at least a portion with a conical shape.
54. (New) The intramedullary nail of claim 45, wherein the nail body has a tubular cross-section.
55. (New) The intramedullary nail of claim 45, wherein the axes of all transverse holes are located in planes orthogonal to the longitudinal axis of the nail body.
56. (New) An intramedullary nail comprising:
a nail body having a longitudinal axis, a proximal end configured and dimensioned for coupling to an insertion device, and a distal end having a tip configured and dimensioned for insertion into the intramedullary canal of a long bone,
at least three transverse holes extending through the distal end of the nail body, each transverse hole defining a hole axis, and all three transverse holes grouped at the distal end within a distance x measured from the tip of the nail body to the axis of the transverse hole furthest from the tip,
wherein a projection of the three hole axes of the at least three transverse holes in a plane orthogonal to the longitudinal axis is such that at least two of the projected hole axes are at an

angle α with respect to one another, where $0 < \alpha < 90^\circ$, and where the distance a between the tip and the transverse hole closest to the tip

$$a \leq 5 d$$

where d is the diameter of the transverse hole closest to the tip.

57. (New) The intramedullary nail of claim 56, wherein the distance $a \leq 1.5 d$.

58. (New) The intramedullary nail of claim 56, wherein a plurality of n transverse holes are located in the nail body, and a center of each hole is located at a distance x from the tip of the nail body, where

$$1.05 (n)(d) \leq x \leq 3.0 (n)(d).$$

59. (New) The intramedullary nail of claim 58, where $x < (4(d) + (n-1) (2.2d))$.

60. (New) The intramedullary nail of claim 56, wherein a distance b between the axes of two adjacent transverse holes is $b \leq 1.5 d$.